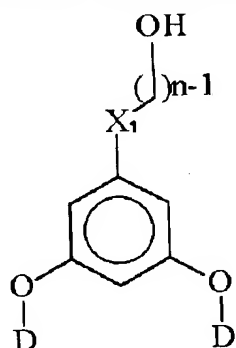


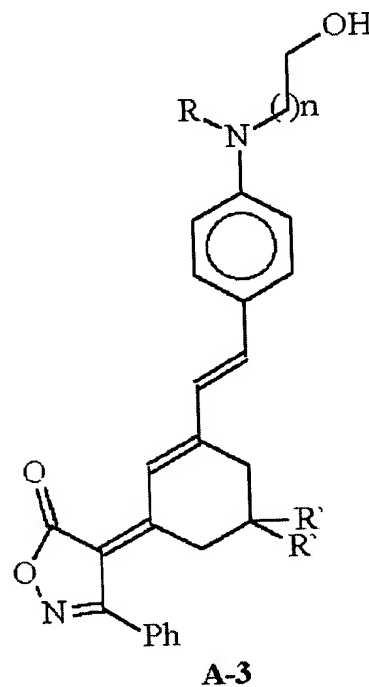
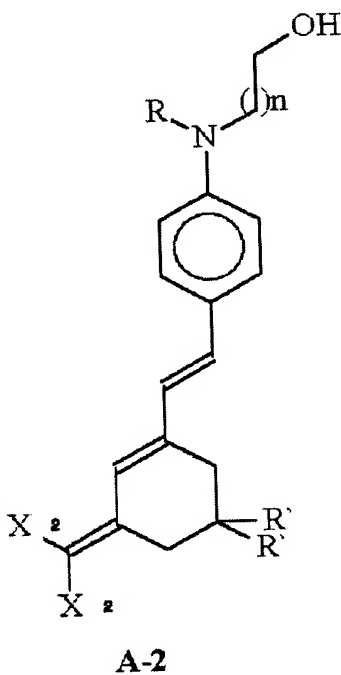
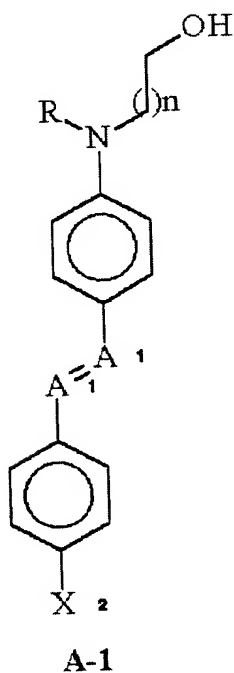
What is claimed is:

1. An optical polymeric compound containing polyimide repeating units to which an organic dye molecular material having the following formula is coupled:



where  $X_1$  is hydrocarbon, oxygen, sulfur, nitrogen, ester ( $\text{CO}_2$ ), or amide ( $\text{CONR}_1$ ), where  $R_1$  is an alkyl or phenyl group having 1 to 6 carbon atoms, D is an organic chromophore molecule, and  $n$  is an integer from 1 to 10.

2. The optical polymeric compound of claim 1, wherein the organic chromophore molecule D has a structure selected from the following formula (A-1), (A-2) and (A-3) in which each chromophore molecule is shown as D-OH:

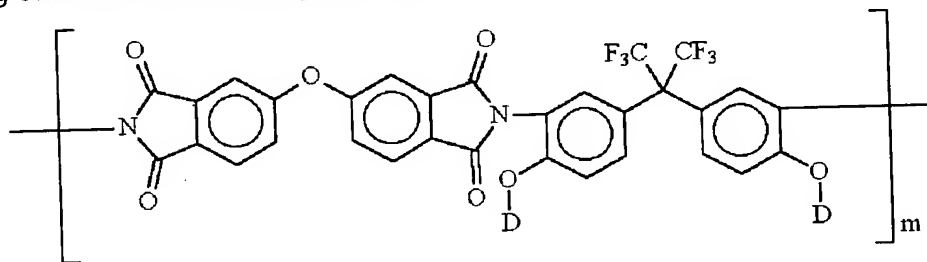


where R and R' are each independently alkyl or phenyl groups having 1 to 10 carbon atoms,  $A_1$  is carbon or nitrogen,  $X_2$  is  $\text{NO}_2$ , a sulfonyl-substituted or unsubstituted

3. The optical polymeric compound of claim 1, having a homopolyimide backbone.

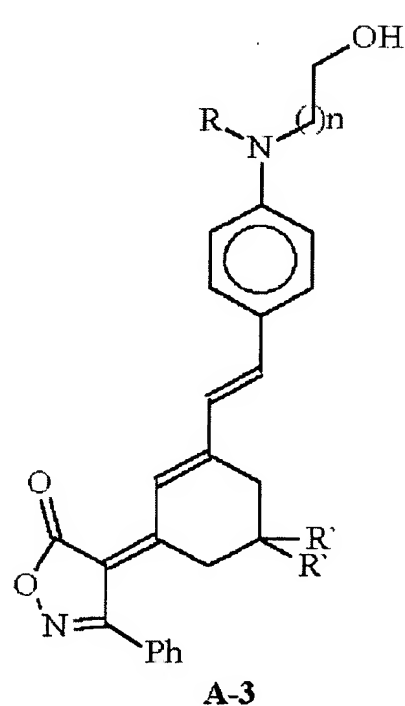
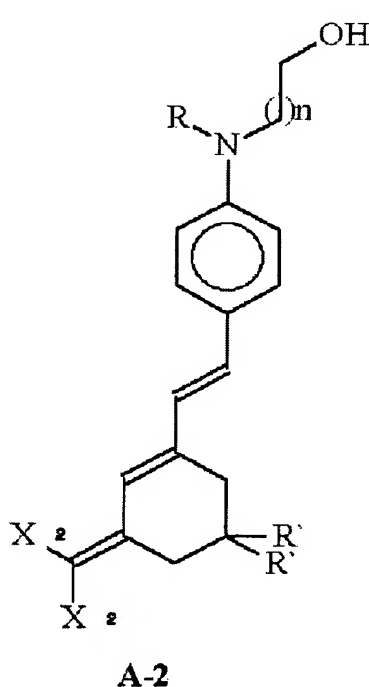
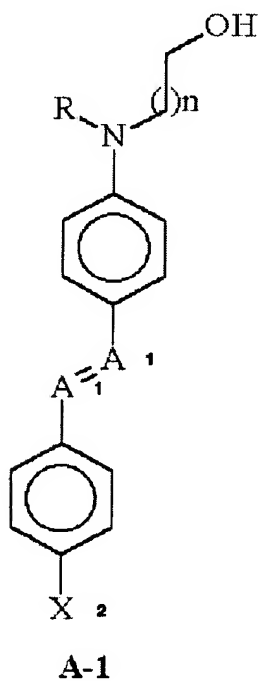
$$\left[ \text{N} \begin{array}{c} \text{O} \\ \parallel \\ \text{C} \end{array} \text{C}_6\text{H}_4 \text{---} \text{A} \text{---} \text{C}_6\text{H}_4 \begin{array}{c} \text{O} \\ \parallel \\ \text{C} \end{array} \text{N} \begin{array}{c} \text{O} \\ \parallel \\ \text{C} \end{array} \text{C}_6\text{H}_3(\text{OD})_2 \text{---} \text{B} \text{---} \text{C}_6\text{H}_4 \begin{array}{c} \text{O} \\ \parallel \\ \text{C} \end{array} \text{N} \right]_m$$

5. The optical polymeric compound of claim 4, wherein the polyimide repeating unit has the following formula:



6. The optical polymeric compound of claim 4, wherein the polyimide repeating unit contains 10-60 % by weight the organic chromophore molecule D.

7. The optical polymeric compound of claim 4, wherein the polyimide repeating unit is coupled with at least one organic chromophore molecule selected from the group of organic chromophore molecules having the following formula (A-1), (A-2) and (A-3) in which each chromophore molecule is shown as D-OH, or with a combination of the organic chromophore molecules in a predetermined ratio:



where R and R' are each independently alkyl or phenyl groups having 1 to 10 carbon atoms, A<sub>1</sub> is carbon or nitrogen, X<sub>2</sub> is NO<sub>2</sub>, a sulfonyl-substituted or unsubstituted alkyl group having 1 to 10 carbon atoms, CN, -C(CN)=C(CN)<sub>2</sub>, an ester group, a carbonyl group, a halogen element, or a haloalkyl group, and n is an integer from 1 to 11.